

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/009355

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ C07D307/79, 307/80, 405/10, 333/54, 405/06, 407/04, 405/04,
417/04, 409/04, A61K31/343, 31/4025, 31/357, 31/443, 31/506,
31/426, 31/381, 31/4178, 31/453, A61P3/04, 11/06, 25/00,

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ C07D307/79, 307/80, 405/10, 333/54, 405/06, 407/04, 405/04,
417/04, 409/04, A61K31/343, 31/4025, 31/357, 31/443, 31/506,
31/426, 31/381, 31/4178, 31/453, A61P3/04, 11/06, 25/00,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAPLUS (STN), REGISTRY (STN), MEDLINE (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 11-503467 A (The Procter & Gamble Co.), 26 March, 1999 (26.03.99), Particularly, Claim 1; "methods" on page 20 & WO 97/28143 A1 07 August, 1997 (07.08.97), Particularly, Claim 1; page 14, "methods"	1-32, 36-39
X	JP 10-330380 A (Takeda Chemical Industries, Ltd.), 15 December, 1998 (15.12.98), Particularly, example 51 & US 6172085 B1 09 January, 2001 (09.01.01)	1-32, 36-39

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
03 August, 2004 (03.08.04)

Date of mailing of the international search report
14 September, 2004 (14.09.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/34262 A1 (Takeda Chemical Industries, Ltd.), 15 June, 2000 (15.06.00), & EP 1136477 A1 26 September, 2001 (26.09.01)	1-32, 36-39
X	JP 10-505089 A (The Procter & Gamble Co.), 19 May, 1998 (19.05.98), & WO 96/07651 A1 14 March, 1996 (14.03.96)	1-32, 36-39
X	OHKAWA, S. et al., "5-aminocoumarans: dual inhibitors of lipid peroxidation and dopamine release with protective effects against central nervous system trauma and ischemia", Journal of Medicinal Chemistry, 1997, Vol.40, No.4, pages 559 to 573; particularly, compound Nos.52, 54	1-32, 36-39
X	JANUSZ, J.M. et al., "New cyclooxygenase-2/5-lipoxygenase inhibitors. 3. 7-tert-butyl-2,3-dihydro-3,3-dimethylbenzofuran Derivatives as gastrointestinal safe antiinflammatory and analgesic agents: variations at the 5 position", Journal of Medicinal Chemistry, 1998, Vol.41, No.18, pages 3515 to 3529; particularly, compound Nos.36 to 38	1-32, 36-39
X	JP 2002-348239 A (Takeda Chemical Industries, Ltd.), 04 December, 2002 (04.12.02), & EP 1323716 A1 02 July, 2003 (02.07.03)	1-32, 36-39
X	JP 5-140142 A (Takeda Chemical Industries, Ltd.), 08 June, 1993 (08.06.93), & US 5376681 A 27 December, 1994 (27.12.94)	1-32, 36-39
A	JP 11-500411 A (Lifegroup S.p.A.), 12 January, 1999 (12.01.99), Full text & WO 96/18391 A1 20 June, 1996 (20.06.96)	1-32, 36-39
A	JP 10-503185 A (Eli Lilly and Co.), 24 March, 1998 (24.03.98), Full text & WO 96/002248 A1	1-32, 36-39

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 33 to 35

because they relate to subject matter not required to be searched by this Authority, namely:

The inventions as set forth in claims 33 to 35 pertain to methods for treatment of the human body by therapy.

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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International application No.

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Continuation of A. CLASSIFICATION OF SUBJECT MATTER
(International Patent Classification (IPC))

Int.Cl⁷ 25/08, 27/06, 43/00

(According to International Patent Classification (IPC) or to both national classification and IPC)

Continuation of B. FIELDS SEARCHED

Minimum documentation searched (International Patent Classification (IPC))

Int.Cl⁷ 25/08, 27/06, 43/00

Minimum documentation searched (classification system followed by classification symbols)

<With respect to subject matter for search>

The term "prodrug" used in the claims is unclear as to what structure is implied, even when the statements in the description are investigated. This term hence makes the scope of the claimed compounds and medicines unclear.

In this international search report, a search through prior art documents was hence made for the compounds specified in the description.

Claims 1-29 involve an extremely large number of compounds. However, the compounds which are disclosed in the meaning of Article 5 of the PCT are limited to an extremely small part of the compounds claimed, and the compounds claimed are not sufficiently supported in the meaning of Article 6 of the PCT.

Therefore, a search was made for the part which is disclosed in and supported by the description, i.e., the compounds specified in the description. Namely, a search was made for compounds shown in claim 13 in which X is oxygen or optionally substituted sulfur and R₃ is aryl, and for compounds in which X is oxygen or optionally substituted sulfur, R₃ is hydrogen, Me, Et, n-Pr, i-Pr, or CH₂OH, R₄ is hydrogen, and the fused ring has an acylamino group in the 5-position.